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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,801	02/22/2002	Joel R. Williams	DISKSYS	1755
7590		05/08/2006	EXAMINER	
JOEL R. WILLIAMS		SHAW, PELING ANDY		
1240 MCKENDRIE ST.		ART UNIT		
SAN JOSE, CA 95126		PAPER NUMBER		
		2144		

DATE MAILED: 05/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Interview Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/081,801		WILLIAMS, JOEL R.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Peling A. Shaw		2144	

All participants (applicant, applicant's representative, PTO personnel):

(1) Peling A. Shaw. (3) \_\_\_\_\_

(2) Joel Williams. (4) \_\_\_\_\_

Date of Interview: 28 April 2006.

Type: a) ☒ Telephonic b) ☐ Video Conference  
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☒ Yes e) ☐ No.  
If Yes, brief description: Interview agenda and previous e-mail correspondence.

Claim(s) discussed: 1.

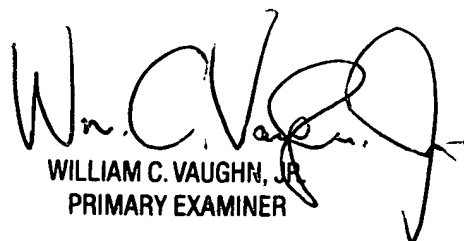
Identification of prior art discussed: Ayd et al. (US 6025989 A).

Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: the subject matter of invention and the referred art in the 102 rejection in the Office Action dated 3/30/2006 were briefly discussed. Applicant is suggested to amend claim 1 to overcome the 102 rejection. The interview agenda and previous e-mail correspondence are appended.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

  
 WILLIAM C. VAUGHN, JR.  
 PRIMARY EXAMINER

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Examiner's signature, if required

## Summary of Record of Interview Requirements

### Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

### Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

#### Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

#### 37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,  
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

### Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

## Shaw, Peling A

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**From:** Joel [joel@emlinux.com]  
**Sent:** Wednesday, April 26, 2006 2:50 PM  
**To:** Shaw, Peling A  
**Subject:** Telephone call regarding Application 10/081.801



fax-2-examiner.pdf

Mr Shaw,

Thanks for taking the time to talk with me today.  
I would like to discuss the Office Action on my application (10/081.801)  
We have scheduled a call at 9:30 eastern time, on Friday 4/28. to  
discuss this further.

As I described on the phone, you are the third examiner to handle  
this application.

With each of the two previous examiners, we had a phone conversation  
where we addressed the objections, pointed out the differences  
between the prior art and discussed possible acceptable changes to  
the claims. Amendments were then provided.  
Each time, the resulting office action came from a different examiner, who  
raised substantially the same objections to the claims and did not  
materially address the our responses.

The current rejection appears to be mostly based on responses to our  
arguments, notably item #6 of the office action.  
Here the argument is made that the "invention is on reducing space and  
electric complexity".  
It further states that  
"Whether exact components are contained in the connected units, i.e. logic  
or removable chassis in Ayd or applicants' CPU subsystem and disk units are  
not the invention"

There are many patents and prior art that reduce space and electric  
complexity.  
This seems overly broad. For example, integrated circuits would be  
considered prior art.  
We should look to the claims to see the differences.  
I assert that the claims between the two patents differ substantially.  
This is what I would like to discuss with you. The discussion will probably  
follow along the lines of the previous a fax that should be in your records.  
This was faxed to Fatima Ast on 6/9/05. A copy is attached.

Thank you,  
Joel Williams - Applicant

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Joel Williams  
emLinux  
408 249 5574

To: Fatima Ast  
Ref: Application No: 10/081.801  
From: Joel Williams – Applicant

Thanks for talking with me briefly today. I will call you on Thursday, at 3pm.  
If possible, I would like the option of conferencing in a patent attorney who has been advising me but is not representing me to the PTO.

The discussion will focus the office action, specifically on the key rejection in items 4-10.  
I would like to understand if some modifications to the claims would be acceptable.

Here are my thoughts on each of these, which I would like to review with you.

#### Item #4

Ayd 3:1-3 describes a removable chassis containing two disk drives, power supply, supervisor card, and fans. This differs from the application, claim 1, which specifies a **single** disk drive and **no chassis**. This is important because it is an object of the invention for the disk drive to fit into standard enclosures designed for disk drives, and specifically not require an specialized chassis. This is also important because the CPU (which the examiner compares to the Ayd Logic Chassis) must substantially conform to the same height and width of the disk drive dimension. No chassis is needed because the CPU and disk drive are simply screwed together.

Ayd 2:64-67 teaches a logic chassis containing multiple cards, including CPU, Memory, I/O and service processor connected by a motherboard. The application differs from this in that most logic is included on one board, without the requirement for a motherboard.

Ayd 3:17-24 describes that the logic and removable chassis are mated and locked with a leavering mechanisim. This illustrates that it is intended to allow for easy separation of these chassis for “in the field” service. The application does not teach an easy separation of the disk and CPU. There is no lever mechanism, rather the CPU is secured to the disk drive via screws. (Fig 1 103/153) The patent teaches that the two are wedged together to form one field replaceable unit.

Ayd 3:17-24 further teaches that the logic chassis and removable chassis electrical connections are mated. There is no requirement that the height and width match either the dimensions of the removable chassis or that of one of the two disk drives contained within the removable chassis. Ayd Fig 1, 14 and 12 appear to show that the removable chassis fits inside the rails #30 of the logic chassis. The removable chassis could be significantly smaller than the logic chassis. The application teaches that these two must be substantially the same height and width.

Ayd Claim 1 requires the removable chassis to be removed from the logic chassis, while the logic chassis remains connected to the outer enclosure. The application specifically does not permit this. Rather the combined unit of disk and CPU are removed from the enclosure as a single unit.

The Ayd patent includes the power supply on the removable chassis. Bussing power and cabling are similar to the application, but differ in the purpose. The raw (input) power is bussed through the logic chassis to the power supply on the removable chassis and then bussed back, in the opposite direction, to the logic chassis to drive the logic chassis electronics.

The application differs from this. The power supply is external to the invention, and power is connected from the external power supply to the CPU and hence to the disk drive.

Mini-Claim chart for claim 1 to help illustrate the differences.

	Ayd Patent – Claim 1	Application – Claim 1
1	Claim describes a modular assembly for a “rack mounted computer”	There is no rack mounting structure defined or required.
2	Requires an outer enclosure plus a logic chassis and a removable chassis. This is essentially 2 cascaded modules (chassis) that fit into an enclosure.	There is no chassis structure or outer enclosure. The disk drive and computer are simply attached together.
3	The logic chassis requires a tailgate structure. (Described at 4:55)	There is no such structure.
4	The removable chassis must be able to be removed, while leaving the logic chassis in place, within the outer enclosure.	The disk drive and computer are one unit, and not intended to be separated in this way. There is no way to remove the disk drive and leave the computer in place.

#### Item #5

Server farms are a well known product. Bundling multiple disk/CPU units into a server farm differs from the Ayd patent because the units making up the farm are different structures, as indicated above. Key differences include:

The application requires only one centralized power supply, whereas the Ayd patent requires a separate power supply for each unit.

The application is able to utilize centralized fan cooling, whereas the Ayd patent teaches a separate fan on each removable chassis.

The application can use industry standard enclosures and wiring connectors for housing disk drives, whereas the Ayd patent teaches custom enclosures, resulting in a significant cost difference.

Items #6 & 7 - Method claims are substantially the same reasoning.

#### Item #8

Ayd has one chassis with two disk drives. The application has one disk/cpu unit that can be cabled to one or more adjacent drives, that are separately mounted in the enclosure.

If the additional drives are not needed, no extra space, or provision for cooling and power is required in the application. In Ayd, this space, power, cooling, and cabling is always provided whether the 2<sup>nd</sup> drive is provisioned or not.

The Ayd patent only allows for one additional disk drive. The application can accommodate more than one drive. If SCSI drive interface is used, six additional drives may be supplied.

#### Item #9

If claims 2, 9, & 16 are allowed, then the dependent claims 3-5, 10-12, and 17-18 should be allowed.

Raid architecture cited in Savage is well known. The application claim 3 provides a more efficient hardware configuration for implementing of this logical architecture. Furthermore, the cited article discloses (paragraph 4) that RAID is "a few drives including an extra one for redundancy". The Ayd patent only allows for two drives. The range of possible RAID architectures is significantly reduced by this limitation, such as multi-drive striping. This limits the RAID architecture to one drive plus one extra drive for redundancy, whereas the application supports the full range of RAID architectures because it supports more disk drives.

#### Item # 10

Ayd discloses only one or two disk drives, and always reserves space, cooling, connectors, power, and mounting chassis structure for two disk drives. The application requires none of this.

#### Items #11 through #14

These are dependent claims that should be allowed if the independent claims are allowed.

Please note that Claims 4 and 5 required the entire server farm to be in one enclosure. Typically server farms are collections of separate standalone computers, whereas the application shares common power supply and cooling.

Proposed amendment to claims 4 & 5:

Change:

... contained in a single enclosure.

To:

... contained in a single enclosure and sharing a common power supply and cooling system.